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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,487	01/29/2004	Sadayuki Kobayashi	IPE-032-030	3734

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EXAMINER
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BUTTNER, DAVID J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/766,487

Applicant(s)

KOBAYASHI ET AL.

Examiner

David Buttner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10-732803.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/16/04</u> . | 6) <input type="checkbox"/> Other: _____  |

The restriction requirement made the previous examiner has been reconsidered. The restriction between the three groups is considered unnecessary. However, the election of species remains. Claims 19-21 are considered drawn to a nonelected species.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 and 17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear if claim 1's "miscible under such flow as caused by the shear rate kept in a range from 100 to 1000  $\text{sec}^{-1}$ " is a required process step or merely a mention of an inherent property if placed under such a shear rate.

Claim 1's "for making the resins miscible" and "for forming a co-continuous structure" are either unclear, grammatically incorrect or superfluous. Are these future intended steps?

Claim 3's "immiscible under no shear flow" and "made miscible" are self contradictory. The pellets are obviously no longer under shear. Phase separation must occur when shear rate stops. The pellets cannot be both immiscible and miscible when the shear rate ceases.

Claim 3's requirement that the blend be immiscible under no shear flow would exclude the polycarbonate/PBT combination of claim 5. This pair is recognized as being homogenous at an appropriate temperature (page 258 of the Okamoto article; page 477

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of Tattum article) and at 10:90 and 90:10 mixing ratios (see table 2 of the Tattum article). How does one determine “immiscibility under no shear flow”?

Claim 11 and 17's dispersed structure is not permitted by the claims from which they depend requiring a co-continuous structure.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,9-11,13 and 14 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over DE3803663.

The reference subjects thermotropic polymers to a shear rate of  $100-1000 \text{ sec}^{-1}$ . The thermotropic polymer can be blended with polycarbonate (example 3). Presumably, applicant's morphology is met because the same materials (polyesters + polycarbonates) are treated in the same manner (a shear rate of  $100-1000^{-1}$ ) as applicant.

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Claims 1,2,6,7,9-11,13 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over DE3803663 optionally in view of Cottis '473.

It is not clear from the DE3803663 abstract if the reference suggests pelletizing the polycarbonate + liquid crystal polyester blend prior to final molding.

It is well known in the plastics art to pelletize blends of thermoplastics prior to final molding. Cottis suggests pelletizing PC/LCP (col 8 line 55) blends prior to injection molding. It would have been obvious to mold the DE3803663 blend into any conventional shape (including pellets).

Claims 1,2,9-13 and 15-18 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the Okamoto article in Polymer #35(2).

Okamoto melt extrudes PBT/PC blends. The blend is quickly quenched to freeze the morphology and then pressed into a film (page 257). The blend has a two phase structure with phase connectivity (ie co-continuous) which is a hallmark of spinodal decomposition (page 258). Okamoto surmises (page 259) the high shear and temperature of the extruder obtains a homogenous mixture. After leaving the extruder, the shear rate turns to zero so spinodal decomposition proceeds. Okamoto must have achieved applicant's required shear rate because the blend is said to be homogenous. Presumably applicant's concentration fluctuation/distance between particles limitations are inherently met by the reference because both Okamoto and applicant spinodally decompose from an single phase blend.

Claims 1,2 and 6-18 rejected under 35 U.S.C. 103(a) as being unpatentable over the Okamoto article in Polymer #35(2) optionally in view of Nedzu'806 or Scott '572.

Okamoto suggests the blend of applicant's claims, but does not suggest preparing pellets or injection molding.

Both Nedzu and Scott's examples show PC/PBT blends being pre-pelletized prior to final molding. This is a common molding technique known to all in the thermoplastics art. It would have been obvious to produce pellets of Okamoto's blend for later molding.

In addition Scott's examples show PC/polyester blends can be injection molded. It would have been obvious to injection mold Okamoto's blend.

Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Meier '906.

Meier teaches normally immiscible pairs of polymers can be made to exhibit a single T<sub>g</sub> (col 7 line 9) when intensively blended under supercritical gases (abstract). Meier states the blends are processed in the customary manner into moldings (abstract), but does not teach that the blend is made into a pellet.

It is well known in the thermoplastics art for suppliers to pre-pelletize thermoplastic blends prior to final molding. This allows the end user to carry out the molding step without having to conduct blending. It would have been obvious to pelletize Meier's blend.

Also note Meier teaches high shear zones produce finely dispersed mixtures of otherwise immiscible polymers (col 1 line 15).

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Claims 3-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Meier '906 in combination with Nedzu '806.

Meier suggests his blending technique can be used on various polymers including polycarbonates (col 2 line 8), polyesters (col 2 line 21) etc. Meier does not clearly teach the blending the polycarbonate with polyester.

Nedzu teaches pellets of PC/PBT blends are useful for molding into heat sealable films (abstract; examples). It would have been obvious to employ Meier's mixing techniques for making Nedzu's PC/PBT pellets to improve compatibility between the components.

Claims 13 and 14 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kyu '619.

Kyu (col 3 line 28-38) produces polymer blends in single phase form, then thermally treats the blend to cause spinodal decomposition to form an interconnecting network (ie co-continuous structure). Presumably applicant's concentration fluctuation/distance between particles limitations are inherently met by the reference because both Kyu and applicant spinodally decompose from an single phase blend. Note that Kyu suggests the blend can be PC +SAN (col 7 line 61) which is one of applicant's preferred pairs (page 14 line 27 of spec).

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

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A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-18 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-18 of copending Application No. 10-732803. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-18 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 11-020564. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending application also claims (eg #3,4,9)



blends of PC/PBT being mixed under the same shear rate and concentration fluctuations encompassing the current claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Buttner whose telephone number is 571-272-1084. The examiner can normally be reached on weekdays from 10 to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Buttner      DAVID J. BUTTNER  
PRIMARY EXAMINER

5/5/06

